Catalogue of American Amphibians and Reptiles.

HARDY, JERRY D., JR. AND JAMES D. ANDERSON. 1970. *Ambystoma mabeei.*

Ambystoma mabeei Bishop
Mabee's salamander

Ambystoma mabeei Bishop 1928:157. Type locality "Low grounds of the Black River near Dunn, Harnett County, North Carolina." Holotype, U.S. Natl. Mus. 75058, collected by W. B. Mabee, May 12, 1923 (examined by author).

Linguaelapsus mabeei: Freytag 1959. Transfer of *mabeei* to *Linguaelapsus* Cope.

• CONTENT. No subspecies are recognized.

• DEFINITION. A small, stout *Ambystoma* reaching a total length of 100 mm. The head is relatively narrow and the tail is short, comprising 40 percent of the total length. All teeth are in a single row and palatine teeth (*sensu* Tihen 1958:10) are present. The plicae of the tongue branch from a median groove. There are usually 13 costal grooves, and 2 intercostal spaces between the adpressed limbs. The dorsum is deep brown to black with indistinct light flecks, the sides are lighter with numerous whitish flecks, and the venter is lighter brown or gray with a few light flecks.

Larvae are typically brown and yellow above and flesh colored below. The pattern consists of a light, unbroken mid-dorsal stripe and three lateral dark stripes, the uppermost of which contains a single row of ill-defined dots. Interspersed between the dark stripes are two light lateral stripes which occasionally are broken into a series of spots or dashes. Dark mottling typically is found in the fins of older larvae. Larvae hatch at an average total length of 8.5 mm, and transformation begins at approximately 50 mm.

• DESCRIPTIONS. Bishop (1943) presented a comprehensive description of the adult. Other descriptions appeared in works by Conant (1958), Blair (1958), Brimley (1944), and Martof (1956). Brimley (1926, 1927) briefly described a specimen from North Carolina under the name *Ambystoma microstomum.* Cope (1868, 1889) commented on the specimens, supposedly from Georgia, under the name "*Amblystoma conspersum*" (for discussion of this problematic record see Neill, 1957). Tihen (1958) discussed osteology and Freytag (1959) mentioned some features of osteology and body proportions. Highton (1957) implied that the number of trunk vertebrae is usually 15 (two more than the number of costal grooves). Tihen and Chantell (1963) briefly mentioned morphometric characteristics of the centrum in comparison to other ambystomatids. Dunn (1944) described the structure of the tongue. The eggs were described by Hardy (1969a) and the larvae by Jopson (1940) and Hardy (1969a). Schwartz and Etheridge (1954) compared larvae tentatively identified as *Ambystoma cingulatum* to Jopson's description of *mabeei* larvae.

• ILLUSTRATIONS. Adults were figured by Bishop (1928, 1943), Conant (1958), and Hardy (1969b). Bishop (1928) presented details of mouth structure, and Tihen (1958) illustrated premaxillae, prevomers, and parasphenoids. Eggs and larvae were figured by Hardy (1969a).

• DISTRIBUTION. The species apparently is restricted to the coastal plain of North Carolina and South Carolina. Numerous authors have included Georgia in the range of *mabeei* (Dunn, 1940; Bishop, 1943; Blair, 1957; Martof, 1956; Neill, 1949, and Schmidt, 1953). Conant (1958) excluded Georgia from his text statement of the range, but placed a question mark at the Georgia locality on his distribution map. Brame (1967) restricted the range to North Carolina and South Carolina. These inclusions of Georgia in the range mostly are based on Dunn's (1940) comment that "Cope's later concept of (*conspersum*) was largely based on three specimens of *A. mabeei* (ANS 1402 from Charleston, S.C., and ANS 1400–1 from Liberty Co., Georgia)."

Specific or general localities for South Carolina are mentioned by Dunn (1940), Jopson (1940), Mosimann and Rabb (1948), Penny (1952), and Wright (1935b) and the species appeared in the list of South Carolina salamanders by Gee (1936). Cope (1889) mentioned a specimen from Oakley, South Carolina under the name *Chondrotus microstomum.* Specific localities and comments on ecological distribution in North Carolina were presented by Brimley (1944), Cummins *et al.* (1958), Depoe *et al.* (1961), Funderburg (1955), Hardy, (1969a, b), and Hutchison (1961). Brimley (1926, 1927) mentioned the type locality under the name *Ambystoma microstomum.* Neill (1954) commented that a North Carolina record of *Ambystoma texanum* was probably based on *mabeei.* Bishop (1943) and Brimley (1944) described a nearly transformed larva from Andrews, Cherokee County, North Carolina, and suggested that it might be *mabeei.* This locality, however, is in the mountains of extreme western North Carolina and is far removed from the typical coastal plain habitat in which *mabeei* is normally found.

Ambystoma mabeei has been recorded from near river bottoms (Bishop, 1928), tupelo-cypress bottoms in pine woods (Mosimann and Rabb, 1948), cypress and gum swamps (Jopson, 1940), and pine forest. Breeding populations have been found in and around shallow, acid ponds. These ponds vary considerably in size and depth, but share the common characteristic of being found in or very near extensive stands of pine. Adult specimens of *mabeei* have been collected from the dry beds of these ponds during autumn droughts (Hardy, 1969b).

• FOSSIL RECORD. None.

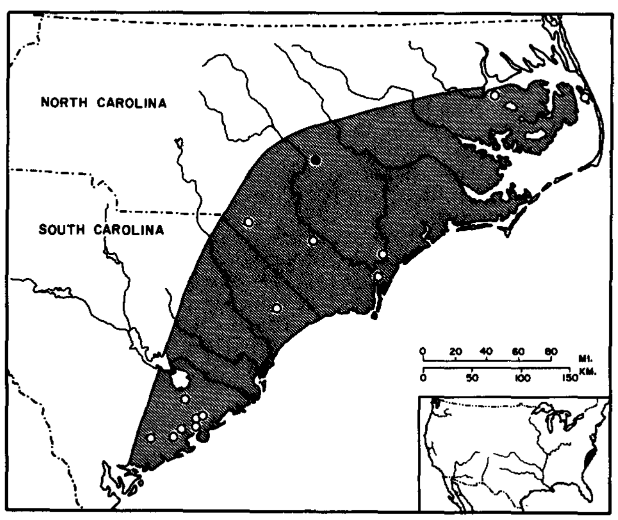
• PERTINENT LITERATURE. A number of authors (Hay, 1892; Hurter, 1911; Stejneger and Barbour 1917, 1923) included South Carolina in the range of *Ambystoma microstomum.* These inclusions resulted from the early confusion of *microstomum* (= *texanum*) with *mabeei.* Stejneger and Barbour (1933) suggested that *mabeei* was restricted to the type locality, but later (1939) included North Carolina and South Carolina in the range. The type specimen was listed by Cochran (1961) and the type locality was mentioned by Brimley (1938). Valentine (1967) included the paper by Jopson (1940) in his bibliography of larval salamanders. The common name "Mabee's salamander" was formalized by Conant *et al.* (1956), and the species was mentioned without comment by Powlas (1967) and Rubin (1968).

Hutchison (1961) studied the critical thermal maximum of *mabeei,* pointing out that it was the highest of any species of *Ambystoma* he studied. Newcomer (1968) studied geographic variation in blood serum proteins.

The Literature Cited is thought to include all pertinent literature on the species.

• ETYMOLOGY. The species is named for Mr. W. B. Mabee, collector of the type-specimen.

• REMARKS. Goin (1950) suggested that *mabeei* is related to *cingulatum, annulatum, texanum,* and possibly *schmidti.* Tihen (1958) included these species (along with *mabeei*) in the subgenus *Linguaelapsus.* Freytag (1959) proposed reinstating *Linguaelapsus* Cope as a genus, and subsequently (1962) presented a key to the included species.



MAP. Distribution of *Ambystoma mabeei.* The solid spot marks the type-locality; open circles indicate other records.

Comment

Ambystoma mabeei has remained poorly known since its description in 1928. Wright (1935a, b) included it in his list of rare North American reptiles and amphibians and it is still rare in collections.

The spermatophore and courtship have not been described. The geographic range remains poorly known and the ecological factors influencing distribution and activity are poorly understood.

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